

Novel Oral Poliovirus Vaccine Strains: Containment Requirements

What are Novel Oral Poliovirus Vaccine Strains?

The Global Polio Eradication Initiative (GPEI) supports efforts to develop novel oral poliovirus vaccine (nOPV) strains. Researchers designed these strains to be more genetically stable than other oral poliovirus vaccine (OPV) strains.



Why Is nOPV Needed?

- Circulating vaccine-derived poliovirus (cVDPV) outbreaks are a barrier to polio eradication.
- cVDPV outbreaks occur when the live, weakened strain of poliovirus contained in OPV spreads. It spreads through the fecal-oral route in low-vaccine coverage areas **over a long period of time**.
- Type 2 cVDPV (cVDPV2) is the most prevalent form of cVDPV.
- CDC and GPEI partners from around the world worked together to develop a novel oral poliovirus vaccine type 2 (nOPV2) to better address the evolving risk of cVDPV2 in low-vaccine coverage areas.
- nOPV2 is recommended for use in cVDPV2 response through a World Health Organization (WHO) Emergency Use Listing (EUL).

For what purpose can nOPV2 strains be handled outside of Global Action Plan (GAP) III containment requirements?



nOPV2 can **only** be used outside of GAPIII containment requirements for

- OPV vaccine production.
- vaccine quality control testing.
- clinical trials.
- cVDPV2 outbreak response.



nOPV2 **cannot** be used outside GAPIII containment requirements for research purposes.



nOPV2 must be reported in the National Inventory for Poliovirus Containment.

What Is nOPV?

Seven strains of nOPV were created: two nOPV1, three nOPV2, and two nOPV3 strains. The Containment Advisory Group (CAG) has evaluated two of the seven strains for use outside of GAP III containment:

- nOPV2 candidate 1 - (aka nOPV2-c1 or S2/cre5/S15domV/rec1/hifi3/S2P1)
- nOPV2 candidate 2 - (aka nOPV2-c2 or S2/S15domV/CpG40)

Facilities approved by CAG can use these two strains outside of GAPIII containment only for the purposes outlined by CAG.



Is nOPV2 Safer Than mOPV2?

Yes. nOPV2 is a modified version of the monovalent OPV type 2 vaccine (mOPV2). Researchers designed nOPV2 as a safer alternative to mOPV2. It is more genetically stable. nOPV2 also

- provides comparable protection against poliovirus type 2.
- produces lower or comparable viral shedding.

Why Does nOPV2 Require GAPIII Containment?

- nOPV2 is a live poliovirus.
- nOPV2 is a modified version of OPV2, and OPV2 requires containment.
- Ongoing monitoring is necessary to ensure safety.
- Containment is a WHO EUL protocol requirement.
- Other nOPV strains also require GAPIII containment.

Contact the U.S. National Authority for Containment of Polioviruses if considering use of nOPV strains outside of GAPIII containment requirements.

Resources

- U.S. National Authority for Containment of Poliovirus (NAC), <https://www.cdc.gov/cpr/polioviruscontainment/index.htm>, 404.718.5160, poliocontainment@cdc.gov
- [Global Action Plan III](#)
- [GPEI nOPV2 website](#)
- [GPEI Vaccine-Derived Polioviruses](#)

